

reviewed. The claims in the application are now claims 10-13 and 18-34, and these claims define patentable subject matter under §§102 and 103, and therefore should be allowed. Applicant accordingly respectfully requests favorable reconsideration and allowance.

The restriction requirement has been repeated and made final, and consequently claims 24-29 are withdrawn from consideration. Applicant respectfully maintains that the requirement is inconsistent with unity-of-invention rules, especially PCT rule 13, and that all of the claims should be examined. Applicant accordingly respectfully reserves the right to petition this matter.

Nevertheless, because all of the non-elected claims are dependent ultimately on examined claim 18, applicant understands that (consistent with normal U.S. practice) the non-elected claims will be rejoined and considered if claim 18 is found to be allowable.

Some new claims have been added, support being found at page 2, lines 30-35, and at page 3, lines 16-18 and 36. These new claims are believed to all fall within the elected subject matter, except for possibly for claim 34 which may be deemed by the Examiner to fall within non-elected group II. These claims are all patentable for the same reasons as

indicated below, and because they all depend from either patentable claim 18 or patentable claim 10 as explained below.

Claims 18-21 have been rejected as anticipated under §102 by Yoshioka et al USP 4,405,408 (Yoshioka). This rejection is respectfully traversed.

Applicant respectfully breaks down claim 18 below into its various parts, each such part being set forth in italics, followed by a comparison of each such part with the disclosure of Yoshioka.

A filter material comprising a sheet-like matrix...

First, Yoshioka does not disclose a filter material which applicant submits is a definition of what the present invention is, not an intended use. This is fully consistent with *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951) in which the court reviewed 37 of its own prior decisions in cases where it had determined whether or not the claim preamble must be given effect. In the present case, the introductory clause is "essential to point out the invention defined" by the remainder of applicant's claims. Consistent with *Kropa v. Robie*, the preamble must therefore be given effect.

Moreover even if applicant's recitation of "filter material" is ignored, Yoshioka does not disclose a "matrix".

Instead, the paper sheet is formed of the cellulose fibers themselves and there is no matrix.

*...a sheet-like matrix in which is
incorporated a material comprising a base
formed substantially of cellulose fibers...*

If the PTO deems that the paper sheet of Yoshioka is "a sheet-like matrix" then there is no "base formed substantially of cellulose fibers" which "is incorporated" in the matrix. In other words, the paper sheet cannot be both the matrix and the "material comprising a base formed substantially of cellulose fibers" incorporated therein.

The Examiner's attention is respectfully invited to page 3 of applicant's specification, starting at line 7:

According to... the present invention, there is provided a filter material comprising a matrix in which is dispersed a granular formulation...

The matrix may be fabricated from a number of materials, including non-woven fibrous materials, open-cell foam materials or a cotton or viscose gauze. The granular formulation of the material [one or more cellulosic materials, for example virgin pulp and wood chip, together with one or more carboxylic acids in powder form] may be incorporated into the matrix... (Bracketed material added from page 2, lines 19-21)

Again, Yoshioka does not disclose both a sheet-like matrix and a material incorporated therein which comprises a base formed substantially of cellulose fibers.

...cellulose fibers onto which is adsorbed a composition comprising one or more aliphatic carboxylic acids having hydrocarbon chains consisting of 8 to 20 carbon atoms.

Although it is implied in the rejection, and although palmitic acid and stearic acid are mentioned in Yoshioka at column 3, lines 30 and 31, these materials per se are not impregnated into the paper sheet of Yoshioka. First, these materials are optional; second, and perhaps more importantly, they are **reacted** with other components and therefore are not adsorbed to cellulose as required by claim 18, i.e. the cellulose and the carboxylic acid never meet.

As regards the first point, column 3, lines 5-11 of Yoshioka state as follows:

According to the present invention, the aforementioned aliphatic monohydroxy monocarboxylic acid having 9 to 12 carbon atoms [constituting the invention of Yoshioka] does not necessarily have to be used singly or as a pure substance, but it may be used in the form of a mixture such as fatty acids of lanolin or a mixture with one or more aliphatic monocarboxylic acids having 9 to 32 carbon atoms. (Bracketed material added)

This makes clear that the aliphatic monocarboxylic acids or the fatty acids of lanolin are optional. This is supported by the examples, some of which include such an added material and some of which do not. We therefore here at column 3 have a classic basket or shotgun disclosure which cannot support an anticipation rejection.

Let us now consider the examples. Example 3 includes adipic acid which contains 6 carbon atoms. Claims 8 and 9 include sebacic acid which contains 10 carbon atoms. Example 9 also contains oleic acid which contains 18 carbons. Examples 4 through 7 also include lanolin fatty acid which is said to contain normal fatty acids of 10-32 carbons. The only example containing stearic acid is reference example 1 at column 9, and this is given as an **unsatisfactory** comparative example.

Applicant wishes to emphasize the second point noted above, namely that even in those cases where an aliphatic monocarboxylic acid is used in Yoshioka, it never *per se* reaches the cellulose of the paper sheet. Thus, the mixture (when indeed a mixture is used) of the monohydroxy monocarboxylic acid and aliphatic monocarboxylic acid is used to make a stable aqueous dispersion of an alkyl ketene dimer for use as a cellulose treating agent (column 5, lines 1-5). The carboxylic acid itself is **not** adsorbed into the cellulose fibers (of the paper): rather the **reaction product** of the monohydroxy monocarboxylic acid and polyalkylene polyamine (column 2, lines 2-7) is used to stabilize a dispersion applied to a paper sheet (column 2, lines 37-41) for sizing purposes (column 5, lines 6-26).

The aforementioned crucial distinction is perhaps more readily understandable from a consideration of the Yoshioka examples. Take example 8 as an illustration. In example 8 (with reference back to example 1), there is provided a mixture of castor oil fatty acid, sebacic acid and pentaethylenehexamine. With reference back to example 1, these are placed a flask and

subjected to reaction at [elevated temperature] for 6 hours [and then "cooled..."]

Returning to the text of example 8:

At the end of the reaction, 54 g of glacial acetic acid was added thereto... Then after adding 7.4 g of epichlorohydrin thereto, the resultant system was subjected to a reaction... to produce a dispersion....

It is this dispersion, not the sebacic acid (which is long gone), which is mixed with a dispersion of the alkyl ketene dimer and impregnated into the paper sheet.

It should be clearly evident that claim 18 is not anticipated by Yoshioka, and indeed therefore none of applicant's claims are anticipated by Yoshioka.

Applicant respectfully requests withdrawal of the rejection under §102.

Claims 10, 11, 13 and 23 have been rejected as obvious from Yoshioka. This rejection is respectfully traversed.

As regards claim 23, it is patentable because it depends from and incorporates the subject matter of claim 18. The cotton or viscose gauze is, as recited, the matrix which support the cellulose fibers. Again, these are two separate elements. There is nothing in Yoshioka which would have led the person of ordinary skill in the art to provide a supporting matrix for separate cellulose fibers, and indeed this makes no sense in Yoshioka which involves the treatment of paper.

As regards claims 10, 11 and 13, the powdered formulation of the one or more carboxylic acids as recited in claim 10 is indeed important and should not be merely brushed aside as insignificant for these claims. Attention is respectfully invited to applicant's specification at page 2, lines 17-24. The physical form of the carboxylic acid is relevant because in the present invention the carboxylic acid is reacted with (adsorbed onto) the cellulose, which does not happen in Yoshioka.

Moreover, Yoshioka is not even relevant in any rejection based on S103. In this regard, applicant respectfully notes that the person of ordinary skill in the art, seeking to solve the problem faced by applicant, would not be even led to consider Yoshioka which concerns paper-making and treating, **not** water filters. The skilled artisan,

looking for a material for filtering oily contaminants from water, as in the present invention, would not look for a solution in the field of Yoshioka patent.

Applicant respectfully requests withdrawal of the rejection under §103 based on Yoshioka.

Claims 12 and 22 have been rejected as obvious from Yoshioka in view of Isgur et al USP 4,182,649 (Isgur). This rejection is also respectfully traversed.

Yoshioka has been discussed above and its deficiencies relative to the present invention have been noted extensively. Isgur relates to

a compressible, resilient, homogeneous composite sheet comprising in combination, particles of hydrophilic polyoxyalkylene polyurethane foam and fibers intertwined therewith and binding the foam particles together to form a homogeneous sheet. (Column 1, lines 49-54).

Applicant can see no relationship between Isgur and Yoshioka which would cause a person of ordinary skill in either art to seek to combine these highly diverse citations, incidentally neither of which appears to be related to applicant's art.

However, assuming *ad arguendo* that it were obvious to attempt to combine these citations, applicant does not see how any possible combination could lead to the claimed subject matter. Thus, considering all the possible ways that these two citations might be combined in retrospect, and taking the

one way which brings such a combination closest to the present invention, the resultant combination would still not have an aliphatic carboxylic acid adsorbed onto cellulose fibers as claimed.


Applicant respectfully requests withdrawal of this rejection.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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Version with Markings to Show Changes Made

18. (Amended) A filter material comprising a sheet-like matrix in which is incorporated a material comprising a base formed substantially of cellulose fibers onto which is ~~absorbed~~ adsorbed a composition comprising one or more aliphatic carboxylic acids having hydrocarbon chains consisting of 8 to 20 carbon atoms.